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THE BOOK OF ANTELOPES.

The Book of Antelopes. By P. L. Sclater and O. Thomas.
4 vols. Illustrated. (London: Porter, 1894-1900.)
Price, 13*l.* 10*s.* net.

IT was the intention of the late Sir Victor Brooke, who for many years of his life devoted a large amount of time and attention to the study of the ruminants generally, to write an illustrated monograph of that interesting and beautiful, although ill-defined, section of them commonly known as antelopes. And with this end in view he instructed the late Mr. Joseph Wolf to prepare a number of coloured sketches of these animals, which were in due course transferred to stone, printed off, and coloured by hand. A considerable bulk of manuscript was also written by Sir Victor; but, for some reason or another, the work was never brought to anything like completion during his lifetime.

And perhaps it was fortunate for science that the material thus accumulated was left in this unfinished state. For the opening-up of Somaliland and East Africa in general, as well as continued exploration in the heart of the continent, have of late years made us acquainted with quite a number of antelopes which were altogether unknown, or but very imperfectly known, to Sir Victor Brooke, so that if the work had been published during his lifetime it would necessarily have been extremely incomplete and imperfect.

By the generosity of Sir Victor's executors the whole of these drawings, plates and manuscript were unreservedly placed at the disposal of the senior author of the splendid volumes before us, who for many years had made constant endeavours to increase our knowledge of the antelopes of Africa, and by whom many remarkable new types had been brought to the notice of the zoological world. As the work would have been too heavy for a man with as many calls on his time as has the secretary of the Zoological Society to carry out alone, Mr. Sclater secured the assistance of Mr. Thomas, of the British Museum. Such additional plates as were necessary to complete the series of the more striking types of antelopes were duly put in hand and completed. And the result of this happy union of forces has been, after several years of arduous labour, to produce a work the like of which has never before been seen, and which will remain a monument alike of the ability and industry of its authors and of a group of lovely animals which are only too rapidly and too surely disappearing for ever before the advance of an all-devouring civilisation.

Despite the fact that the new sketches lack the inimitable touch characteristic of Wolf's animal pictures, they accord fairly well with lithographic reproductions of the latter, and in certain instances are their superior in truthfulness to nature. For in sketches of this description there is always a danger lest fidelity to the model should be sacrificed to artistic effect, an instance in point occurring in the case of Mrs. Gray's waterbuck of the White Nile.

Although coloured figures of a number of the more striking South African antelopes appeared in the well-

known sporting work by the late Sir Cornwallis Harris, while Dr. Gray, in the British Museum "Catalogue of Ruminant Animals," published in 1872, gave a complete list of the species then known to him, no fully illustrated monograph of this group of ruminants has, we believe, ever previously been published—at least in this country—so that the authors have the field practically to themselves. In Gray's Catalogue a total of 101 species of these animals were recognised, of which no less than 81 are African; but in a "Hand-list" published a year later the number was reduced to 98, owing to three of the African names having been found to be synonyms of others. In the present monograph, the authors, apart from a few described during the progress of the work, recognise a total of no less than 133 distinct species, about 120 of which are African. It is true that certain of these so-called species might be regarded by other naturalists (now possibly in some instances by the authors themselves) in the light of local races; but, even making allowance for such possible reductions, the increase in the number of well-established species of these animals since the date of Gray's last list is very noteworthy, and bears eloquent testimony to the energy with which African zoology has been worked up of late years. As the great majority of these new species have been described by one or other of the authors, it was only right and proper that the task of monographing the entire group should have fallen to their lot.

Although most of us have a general and vague idea of what constitutes an "antelope," yet it is somewhat remarkable that the group of animals thus designated is one that does not admit of accurate limitation or definition. Some, for instance, might consider that the chamois and the so-called white goat of the Rocky Mountains were entitled to be included in the group; but this is not the view held by the authors of the present monograph. As a matter of fact, the term is only a vague designation for a number of more or less distinct groups of hollow-horned ruminants which come under the designation neither of cattle, sheep nor goats; and in reality there ought to be a distinct English group-name for each subfamily into which "antelopes" are subdivided by our authors. But we must take things as we find them, and such subdivisions being impossible in colloquial language, we cannot do better than agree to employ the term "antelopes" in the sense in which it is used by the authors; that is to say, as indicating the animals treated of in this work, and no others.

As they have occasion to use it so frequently, it is perhaps a little remarkable that the authors have apparently made no attempt to trace the origin and derivation of the word "antelope." So far as can be determined it appears, however, to trace its origin, through the Latin, to *Pantholops*, the old Coptic, and *Antholops*, the late Greek name of the fabled unicorn. Its adoption by the languages of Europe cannot apparently be traced further back than the fourth century of our era, at which date it was employed to designate an imaginary animal living on the banks of the Euphrates. By the earlier English naturalists, and afterwards by Buffon, it was, however, applied to the Indian blackbuck, which is thus entitled to rank as *the* antelope. It follows that the subfamily typified by this species, in which are included the

gazelles, is the one to which alone the term antelopes should be applied if it were employed in a restricted and definable sense.

In their classification, the authors follow in the main the divisions sketched out by Sir Victor, although they have somewhat increased the number of sections, or sub-families, into which this assemblage of ruminants is split up. Into the limits of such sections it is quite unnecessary to enter upon the present occasion, as it is into any details with regard to species. In the main the characters of most of the species have been drawn from the magnificent series of skins in the British Museum; and where this is the case no emendation on the diagnosis given by the authors is ever likely to be required. In a few instances, however, the Museum was possessed of only very inadequate material at the date when the descriptions were written, so that in these cases there is room for revision. An instance in point is afforded by the white-eared kob of the swamps of the Upper Nile, complete specimens of which have recently been presented to the Museum. By means of these it has been ascertained for the first time that the old bucks of this handsome species are deep black, at least during the pairing season.

Nomenclature, again, is a subject on which some change of opinion has taken place among naturalists during the period in which this work has been in progress. And it is probable that one at least of its authors would not now be prepared to defend the use of all the technical names therein employed.

Although the authors have to deplore the vast decrease that has taken place in the numbers of so many species of African antelopes, in only one instance (that of the blaauwbok) have they to lament complete extermination, and that is not chargeable to the present, or even to the last two or three generations. They record, however, that several species in South Africa are only kept in existence by special protection; and in this connection it may be observed that the effect of the present troubles in that region on these dying species must be watched with the utmost anxiety by all naturalists.

As regards the manner in which the descriptions of the various genera and species are drawn up, the reputation of the authors is a sufficient guarantee that this is, in the main, beyond criticism. And no effort appears to have been spared in order to acquire as much information as possible with regard to geographical distribution. As neither of the authors (except, perhaps, the junior in his youthful days) is acquainted with the animals described in their native wilds, recourse has been necessitated to the writings of others; and the authors may be congratulated that in most instances they have had the courage to give these borrowed accounts in their original guise, instead of endeavouring to conceal their source by paraphrasing.

In one respect, and in one respect only, is there cause for regret in connection with this undertaking, namely, that the authors have not seen fit to refer, or at least in any detail, to the comparatively little that is known in relation to the past history of the group of which they so ably treat. The description and definition of species (even if they be the chief points of interest to sportsmen) are most important, but they are, and can be, only com-

paratively insignificant features in the philosophical study of animal life and its meaning. One of the burning questions of the day (in zoological circles) is the origin of the Ethiopian fauna; whether it is endemic in the land from which it takes its name, or whether it is due to an immigration from more northern climes. As remains of species closely allied to the giraffes and antelopes of modern Africa are met with in the later Tertiary deposits of India, Persia and Greece, it is obvious that the groups mentioned have much connection with the solution of this important problem. It is, therefore, greatly to be regretted that the authors have not seen fit to give their own views on this point, so far as the evidence to be derived from antelopes is concerned, or, at all events, that they have not informed their readers that several of the genera of these animals, now restricted to Ethiopian Africa, formerly enjoyed a much more extensive geographical range.

In the prospectus to the work it is stated that the authors "are desirous of making the book interesting and instructive to the naturalist, sportsman and general reader." While maintaining throughout a high standard of scientific excellence, and refraining from lowering their style by the inclusion of so-called purely "sporting" accounts, which are only too frequently most wearisome and distasteful to the cultured reader, the authors may be congratulated on having succeeded in their intentions in a manner deserving of the heartiest commendation on the part of all to whom this splendid and monumental work appeals.

R. L.

THE SCIENCE OF ORE DEPOSITS.

Lehre von den Erzlagernstätten. By Dr. Richard Beck. ii Theil. Pp. ix-xviii + 385-724. (Berlin: Borntraeger, 1901). Mk. 8.50.

WE are thankful to find that Dr. Beck has not kept us waiting an unduly long time for the concluding portion of his valuable work, the first instalment of which was recently reviewed in these pages (see p. 245 January 10). The first part brought the description of the different classes of mineral deposits nearly up to the end of Fissure Veins; this subject is now brought to a conclusion with a number of general observations on this important group of ore deposits, the only criticism upon which need be that their limitations are somewhat too narrowly drawn. Most of the phenomena here described, such as the formation of gossans, enrichment or impoverishment of ores in depth, effects upon the surrounding "country," &c., are by no means confined to fissure veins, but are common to all classes of mineral deposits, depending as they do essentially upon the chemical composition of the mineral contents of the deposit, and either not at all or only in very remote degree upon its genetic relations or morphological features. The alterations and oscillations of mineral constitution that many veins show in depth are well but briefly described, although, perhaps, their close connection in many cases with changes in the country rock is hardly enough insisted on. It is almost certain that the well-known change in depth in the silver and copper contents of the Montana copper deposits is purely a